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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,420	04/12/2001	Vinit Jain	AUS920000847US1	1611

7590 09/14/2004
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EXAMINER

CHANG, SUNRAY

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,420

Applicant(s)

JAIN ET AL.

Examiner

Sunray Chang

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 and 12 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 12, 22, 34, and 40 are objected to because of the following informalities: "units of wok data" has been disclosed in claims without explanations. Appropriate correction is required.

The term, "unit of wok data", has been interpreted as "unit of work data" hereinafter.

2. Claim 22 is objected to because of the following informalities: The term "andreceive" has been disclosed in claim 22. Appropriate correction is required.

The term, "andreceive", has been interpreted as "and receive" hereinafter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter, which applicant(s) regard as their invention.

The term "secondary bus" in claim 22 is vague and indefinite. Because the term "secondary bus" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The explanation in page 10 of specification for bus recites system bus, I/O bus, local bus, and PCI bus.

Examiner could not be sure which bus the "secondary bus" is disclosed and "secondary bus" has been interpreted as "local bus" hereinafter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1 – 40 are rejected** under 35 U.S.C. 102(e) as being anticipated by Robert J. Block (U.S. Patent No. 6,658,473, and referred to as Block hereinafter).

5. **Regarding independent claims 1, 23, and 39**, Block teaches,

- A method [method and apparatus, Col. 2, Line 58] in a data processing system [multiple server computer environments, Col. 2, Line 59] for determining [determines. Col. 2, Line 61] an optimal capacity of a server [server's capacity and load, Col. 2, Line 61] within a set of servers [multiple resources, Col. 2, Line 62].
- Dynamically [periodically, Col. 2, Line 61] collecting [take into account, Col. 3, Line 13 – 14] resource use and units of work data from the server [factors, Col. 14 – 21]; and

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- Identifying the optimal capacity for the server [determines the server's capacity and load, Col. 2, Line 61] using the resource use and unit of work data from the server [factors, Col. 14 – 21].

6. **Regarding dependent claims 2 and 24,**

- Directing [assigned, Col. 3, Line 25] connection requests [session, Col. 3, Line 25] to servers within the set of servers [selection of a server, Col. 3, Line 27] using the optimal capacity for the server [relative desirability, Col. 3, Line 27 – 28].

7. **Regarding dependent claims 3 and 25,** Block teaches,

- The resource use and unit of work data is collected [group manager process, Col. 2, Line 60] in response to an event determines the server's capacity and load, Col. 2, Line 61].

8. **Regarding dependent claims 4 and 26,**

- The event is a periodic event [periodically, Col. 2, Line 61].

9. **Regarding dependent claims 5 and 27,**

- Optimal capacity identified as follows:

$$E_i = D_{i1}/D_{i2} \quad [(\text{unit of work data})/(\text{resource use data})]$$

$$R_i = E_i/(E_1 + E_2 \dots E_n) \quad [\text{ratio of efficiency}]$$

$$P_i = R_i * 100$$

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wherein, E_i is an efficiency of server i ; R_i is a relative efficiency of server i ; P_i is the optimal capacity of server i ; n is a number of servers in the set of servers; D_{i1} is an average number of units of work handled by server i since the last time data was sent to the data processing system; and D_{i2} is an average resource use for server i since the last time data was sent to the data processing system.

Block teaches, The group manager obtain a ratio which represents the capacity of any given resource divided by the total current usage of the resource added to the total expected added usage by the resource [Col. 11, Line 56 – 59 and Fig. 10].

Block further teaches a strategy code [Col. 12, Line 6 – 22]

10. Regarding dependent claims 6 and 28,

- The set of servers are located in a local area network [Fig. 1].

11. Regarding dependent claims 7 and 29,

- The set of servers are a set of virtual servers [virtual desktop, Col. 4, Line 48 – 49] located on the data processing system [computer system, Col. 4, Line 48].

12. Regarding dependent claims 8, 14, 30, and 36,

- The resource use includes at least one of processor use, memory use, and bandwidth use [Col. 3, Line 13 – 17].

13. Regarding dependent claims 9, 15, 31, and 37,

- The unit of work data includes at least one of a number of packets and a number of connections [Col. 3, Line 18 – 22].

14. Regarding dependent claims 10 and 32,

- Sending the optimal capacity [capacity and load information, Col. 2, Line 63] to the server [broadcast to the other servers in the group, Col. 2, Line 63 – 64].

15. Regarding dependent claims 11 and 33,

- Sending, by the server, the optimal capacity [determines the server's capacity and load, Col. 2, Line 61] to a load balancer [group manager process, Col. 2, Line 60], wherein the load balancer [group manager process, Col. 2, Line 60] directs [broadcast, Col. 2, Line 63] connection requests to the set of servers [other servers in the group, Col. 63 – 64] using the optimal capacity [capacity and load information, Col. 2, Line 63].

16. Regarding independent claims 12, 34, and 40,

- A method [method and apparatus, Col. 2, Line 58] in a data processing system [multiple server computer environments, Col. 2, Line 59] for determining [determines. Col. 2, Line 61] an optimal capacity of a server [server's capacity and load, Col. 2, Line 61] within a set of servers [multiple resources, Col. 2, Line 62].

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- Tracking resource use and units of work since a last collection of resource use and units of work data from a server [Group manager process determines whether the session exists on at least one server for the token, Col. 11, Line 29 – 30];
- Sending the resource use and units of work performed data to a server in response to an event [each group manager process residing on each server will determine resource capacity and load, Col. 11, Line 63 – 65]; and
- Receiving an identification of an optimal capacity from the server [compute the desirability, Col. 11, Line 67] in response to sending [pass, Col. 11, Line 65] the resource use and units of work performed data [resource utilization and load, Col. 11, Line 66].

17. Regarding dependent claims 13 and 35,

- Sending [pass, Col. 11, Line 65] the identification received from the server [resource utilization and load, Col. 11, Line 11] to a load balancer [group manager processes, Col. 66 – 67].

18. Regarding dependent claims 16 and 38,

- Responsive to an absence of a reception of an identification of the optimal capacity within a selected amount of time [first available server, Col. 11, Line 12], initiating [initiate, Col. 11, Line 12] a process to replace the server [session, Col. 11, Line 12] and perform identifications of optimal capacity for the set of servers [determine resource capacity and load, Col. 11, Line 64 – 65].

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19. Regarding independent claims 17 and 22,

- A data processing system [computer, 200, Fig. 2]
- A bus system [218, Fig. 2];
- A communications unit connected to the bus, wherein data is sent and received using the communications unit [218, Fig. 2];
- A memory connected to the bus system, wherein a set of instructions are located in the memory [212, 214, and 215, Fig. 2]; and
- A processor unit connected to the bus system [213, Fig. 2], wherein the processor unit executes the set of instructions [executed by CPU, Col. 6, Line 37] to dynamically collect resource use and units of work data from the server [“measured”, Col. 10, Line 45 – 55]; and identify an optimal capacity for the server [determines system capacity and utilization on each server, Col. 10, Line 38 – 40] using the resource use and unit of work data from the server [factors, Col. 10, Line 45 – 55].

20. Regarding dependent claim 18,

- The bus system includes a primary bus [319, Fig. 3] and a secondary bus [Ebus, 302, Fig. 3].

21. Regarding dependent claim 19,

- The processor unit includes a single processor [213, Fig. 2].

22. Regarding dependent claim 20,

- The processor unit includes a plurality of processors [Col. 5, Line 48 – 54].

23. **Regarding dependent claim 21,**

- The communications unit is an Ethernet adapter [Ethernet & EBUS, 302, Fig. 3].

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jindal et al. (U.S. Patent No. 6,327,622) discloses a load balancing request. Primak et al. (U.S. Patent No. 6,389,448) discloses a distributing load, a sever cluster, a percentage of client requests, regulating data packets. Yoshida et al. (U.S. Patent No. 6,401,121) discloses loads, server. Fanning (U.S. Patent No. 6,615,308) discloses dynamically collecting resource usage, data traffic monitoring, burst length. Brown et al. (U.S. Patent No. 6,397,287) discloses optimal data transfer.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sunray Chang whose telephone number is 703-305-8744 or after October 12, 2004 at (571) 272-3682. The examiner can normally be reached on M-F 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (703)308-3179 or after October 12, 2004 at (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-746-3506.

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September 9, 2004